

WHAT IS CLAIMED IS:

1. A photodetection sensor comprising:

a lead frame having a grounding terminal, a header connected to this grounding terminal, and signal
5 input/output terminals;

a photodetection chip mounted on a surface of the header of the lead frame;

an insulative light-pervious resin encapsulating the photodetection chip and part of the lead frame, tip end
10 portions of the signal input/output terminals of the lead frame being protruded from the light-pervious resin; and

an electrically conductive resin encapsulating a surface of the light-pervious resin except at least a terminal-side exposed portion of the light-pervious resin
15 in vicinity of the tip end portions of the signal input/output terminals, and wherein

the lead frame includes:

an electrical connecting portion directly or indirectly connected to the grounding terminal of the lead
20 frame and having a through hole, and wherein

the electrical connecting portion is protruded from the light-pervious resin and encapsulated in the electrically conductive resin.

2. The photodetection sensor according to Claim 1, wherein a diameter of the through hole is not less than a plate thickness of the lead frame.

5 3. The photodetection sensor according to Claim 1, wherein

the terminal-side exposed portion of the light-pervious resin has a length of at least 0.2 mm in a direction along which the signal input/output terminals 10 extend.

4. The photodetection sensor according to Claim 1, wherein

the electrically conductive resin has a 15 resistivity of not more than 100 $\Omega \cdot \text{cm}$.

5. The photodetection sensor according to Claim 1, wherein

the light-pervious resin has a lens portion 20 confronting the photodetection chip, and wherein

a rear-face-side exposed portion that is not covered with the electrically conductive resin but exposed is present at a portion of the light-pervious resin that covers a rear face of the header on one side opposite to a 25 surface side on which the photodetection chip is mounted,

and this rear-face-side exposed portion confronts the rear face of the header and a projection plan of the rear-face-side exposed portion onto the rear face of the header falls inside a profile of the rear face of the header.

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6. The photodetection sensor according to Claim 1,
wherein

the light-pervious resin has a lens portion
confronting the photodetection chip, and

10 the photodetection sensor further includes a
meshed electrically conductive resin that covers part of a
surface of the lens portion.

7. A photodetection sensor comprising:

15 a lead frame having a grounding terminal, a
header connected to this grounding terminal, and signal
input/output terminals;

a photodetection chip mounted on a surface of the
header of the lead frame;

20 an insulative light-pervious resin encapsulating
the photodetection chip and part of the lead frame, tip end
portions of the signal input/output terminals of the lead
frame being protruded from the light-pervious resin; and

25 an electrically conductive resin encapsulating a
surface of the light-pervious resin except at least a

terminal-side exposed portion of the light-pervious resin in vicinity of the tip end portions of the signal input/output terminals, and wherein

5 the terminal-side exposed portion of the light-pervious resin has a length of at least 0.2 mm in a direction along which the signal input/output terminals extend.

8. A photodetection sensor comprising:

10 a lead frame having a grounding terminal, a header connected to this grounding terminal, and signal input/output terminals;

a photodetection chip mounted on a surface of the header of the lead frame;

15 an insulative light-pervious resin encapsulating the photodetection chip and part of the lead frame, tip end portions of the signal input/output terminals of the lead frame being protruded from the light-pervious resin; and

20 an electrically conductive resin encapsulating a surface of the light-pervious resin except at least a terminal-side exposed portion of the light-pervious resin in vicinity of the tip end portions of the signal input/output terminals, and wherein

the lead frame includes:

an electrical connecting portion directly or indirectly connected to the grounding terminal,

the electrical connecting portion is protruded from the light-pervious resin and encapsulated in the 5 electrically conductive resin, and wherein

the electrically conductive resin has a resistivity of not more than 100 $\Omega \cdot \text{cm}$.

9. A photodetection sensor comprising:

10 a lead frame having a grounding terminal, a header connected to this grounding terminal, and signal input/output terminals;

a photodetection chip mounted on a surface of the header of the lead frame;

15 an insulative light-pervious resin encapsulating the photodetection chip and part of the lead frame, tip end portions of the signal input/output terminals of the lead frame being protruded from the light-pervious resin; and

20 an electrically conductive resin encapsulating a surface of the light-pervious resin except at least a terminal-side exposed portion of the light-pervious resin in vicinity of the tip end portions of the signal input/output terminals, and wherein

25 the light-pervious resin has a lens portion confronting the photodetection chip, and wherein

a rear-face-side exposed portion that is not covered with the electrically conductive resin but exposed is present at a portion of the light-pervious resin that covers a rear face of the header on one side opposite to a 5 surface side on which the photodetection chip is mounted, and this rear-face-side exposed portion confronts the rear face of the header and a projection plan of the rear-face-side exposed portion onto the rear face of the header falls inside a profile of the rear face of the header.

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10. A method for manufacturing a photodetection sensor, comprising the steps of:

mounting a photodetection chip onto a surface of a header of a lead frame connected to a grounding terminal 15 of the lead frame, and encapsulating the photodetection chip and part of the lead frame in an insulative light-pervious resin having a lens portion confronting the photodetection chip, by which a light-pervious resin package is formed; and

20 setting the light-pervious resin package into a metal mold for use with electrically conductive resin, and pressing in one direction, by means of a fixed pin, a surface of the light-pervious resin of the light-pervious resin package confronting a rear face of the header and 25 corresponding to inside of a profile of the rear face of

the header, by which at least part of the lens portion is put into close contact with an inner surface of the metal mold, and injecting an electrically conductive resin into the metal mold, by which the light-pervious resin package 5 except at least part of the lens portion is encapsulated in the electrically conductive resin.

11. A photodetection sensor comprising:

10 a lead frame having a grounding terminal, a header connected to this grounding terminal, and signal input/output terminals;

a photodetection chip mounted on a surface of the header of the lead frame;

15 an insulative light-pervious resin encapsulating the photodetection chip and part of the lead frame, tip end portions of the signal input/output terminals of the lead frame being protruded from the light-pervious resin; and

20 an electrically conductive resin encapsulating a surface of the light-pervious resin except at least a terminal-side exposed portion of the light-pervious resin in vicinity of the tip end portions of the signal input/output terminals, and wherein

the light-pervious resin has a lens portion confronting the photodetection chip, and wherein

the photodetection sensor further includes a meshed electrically conductive resin that covers part of a surface of the lens portion.